



Diablo Canyon Power Plant

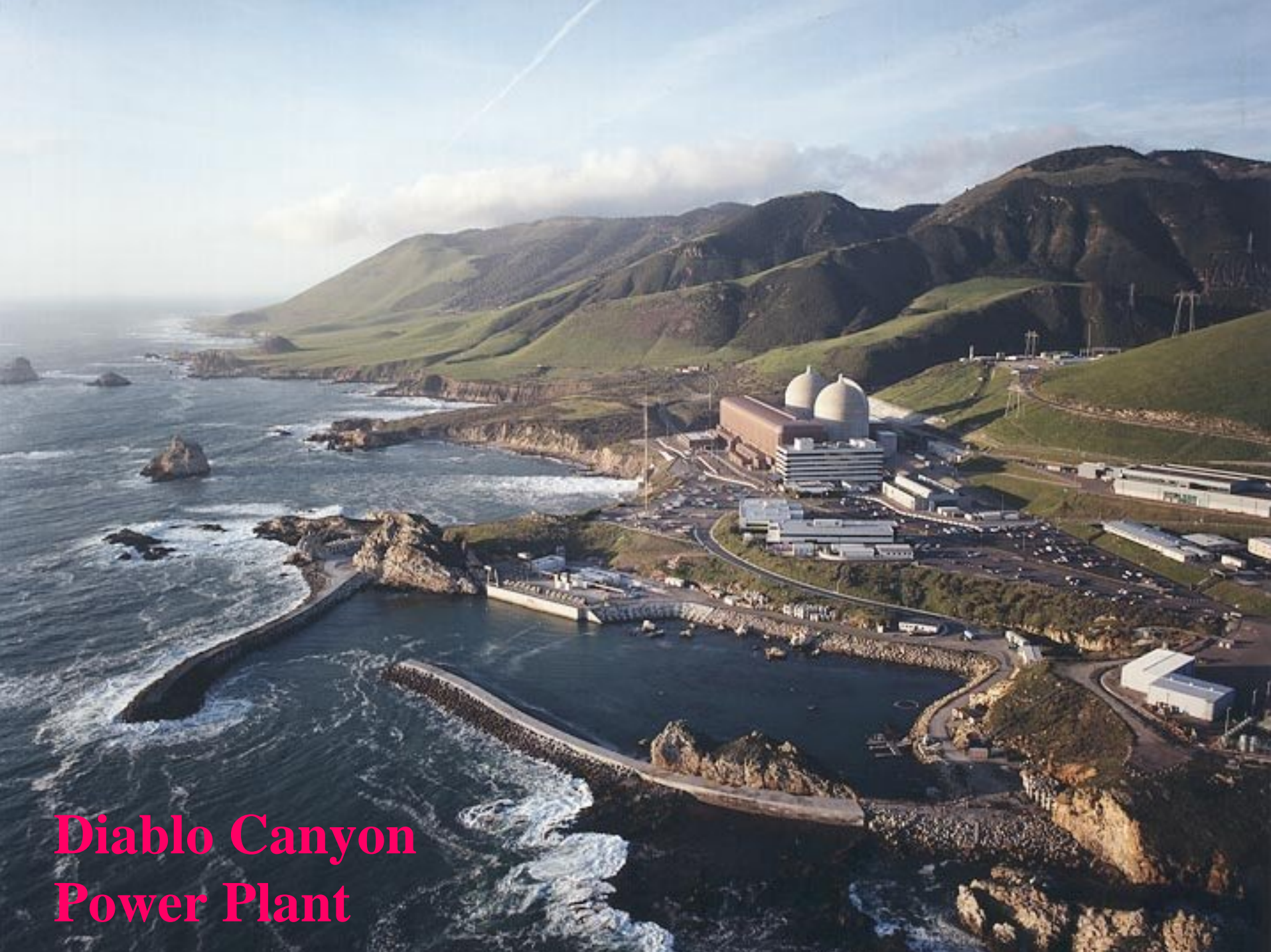


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PANEL 3: California's Operating Nuclear Plants

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Pacific Gas and Electric Company



**Diablo Canyon
Power Plant**



Diablo Canyon Power Plant



- Initial design started in the late 1960's
- Commercial operation (Unit 1) commenced May 1985
- Standard 4-Loop Westinghouse Pressurized Water Reactor (PWR) Design
- Two units, each generating approximately 1100 Megawatts of electricity
 - 10% of California generation; 23% of PG&E retail load
 - Enough for over 2 million homes
- Licensed by the Nuclear Regulatory Commission (NRC) to operate for 40 years

Diablo Canyon Power Plant

PG&E Portfolio

- PG&E Is Implementing The State's Resource Loading Order
 1. Energy Efficiency
 2. Renewables
 3. Demand Response

Power Content Label		
ENERGY RESOURCES	PG&E 2005 POWER MIX* (Projected)	2003 CA POWER MIX** (For Comparison)
Eligible Renewable	13%	8%
Biomass and waste	5%	2%
Geothermal	3%	3%
Small hydroelectric	4%	2%
Solar	0%	0%
Wind	1%	<1%
Coal	3%	18%
Large Hydroelectric	18%	20%
Natural Gas	43%	42%
Nuclear	23%	12%
Other	<1%	0%
TOTAL	100%	100%

* At least 95% of PG&E's POWER MIX is provided by the California Department of Water Resources or from PG&E-owned resources, or specifically purchased from individual suppliers.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

For specific information about this electricity product, contact Pacific Gas and Electric Company. For General Information about the Power Content Label, contact the California Energy Commission at 1.800.555.7794 or www.energy.ca.gov/consumer.

For the benefit of
Pacific Gas and Electric Company's
electric customers.



Nuclear Power is an Important Component of PG&E's Diverse Resource Portfolio

- Reduced Dependence on Natural Gas
- No Greenhouse Gasses
- Safe and Reliable

Benefits of DCPD Generation

- Provides significant fraction of energy needs (10% of CA generation and 20% of PG&E's customer needs)
- Has an exemplary reliability and safety record over its 20 years of operation
- Provides economic benefits of over \$640M annually to the County of SLO and \$724M annually to the State of California



Diablo Canyon Power Plant



	<u>Unit 1</u>	<u>Unit 2</u>
Net Generation Capacity	1,103 Mw	1,099 MW
Full Power Operating License	11/2/1984	8/26/1985
Commercial Operation Date	5/7/1985	3/13/1986
License Expiration Date	9/22/2021	4/26/2025

As of: 7-31-2005



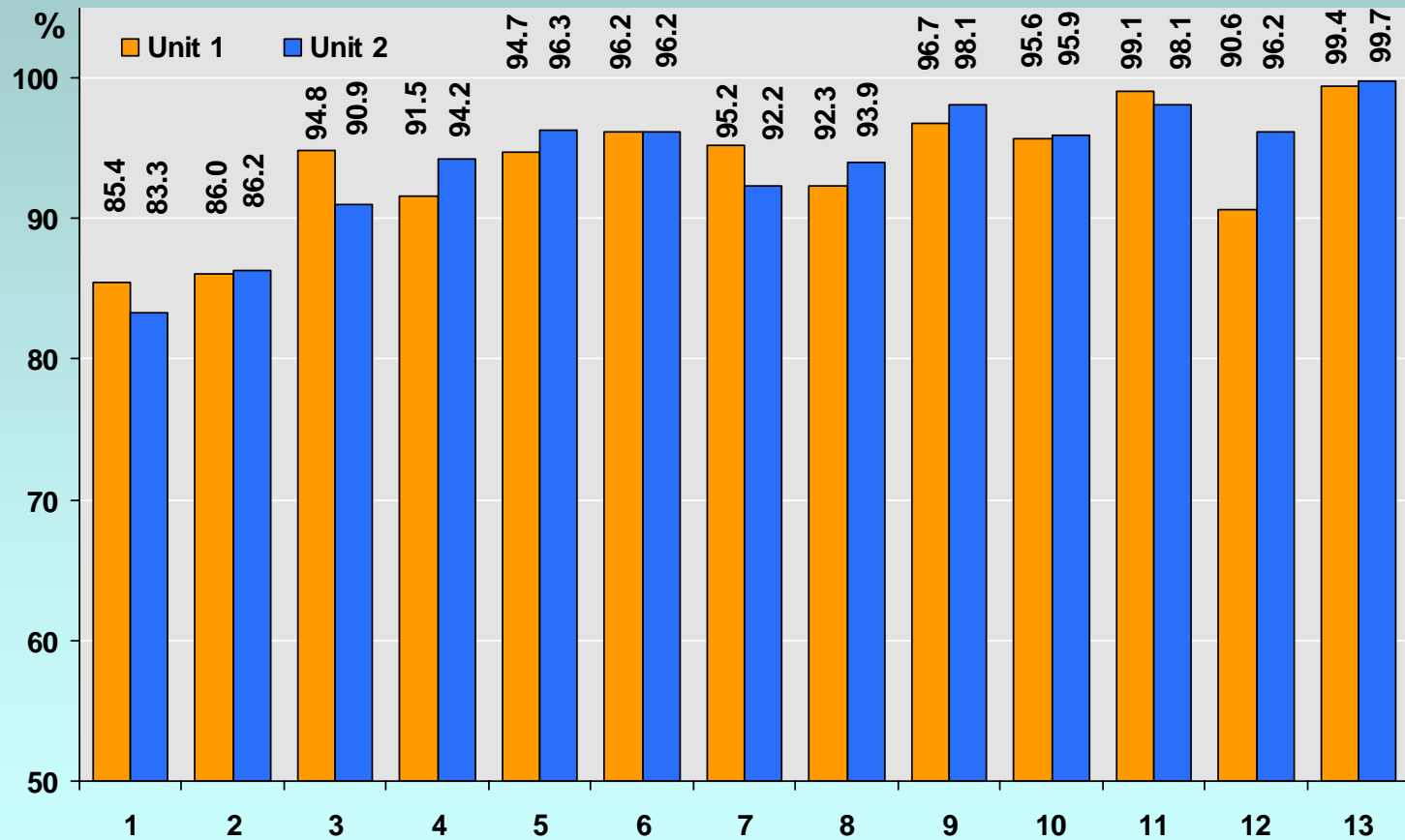
Diablo Canyon Power Plant



	<u>Unit 1</u>	<u>Unit 2</u>
Longest Continuous Days On-line	563 days	558 days
Longest Cycle Power Run	21.8 months	20.8 months
Shortest Refueling Outage	30.3 days	29.5 days
Highest Monthly Net Generation	826.5 GWh	825.4 GWh
Highest Annual Net Generation	9,585.4 GWh	9,285.0 GWh

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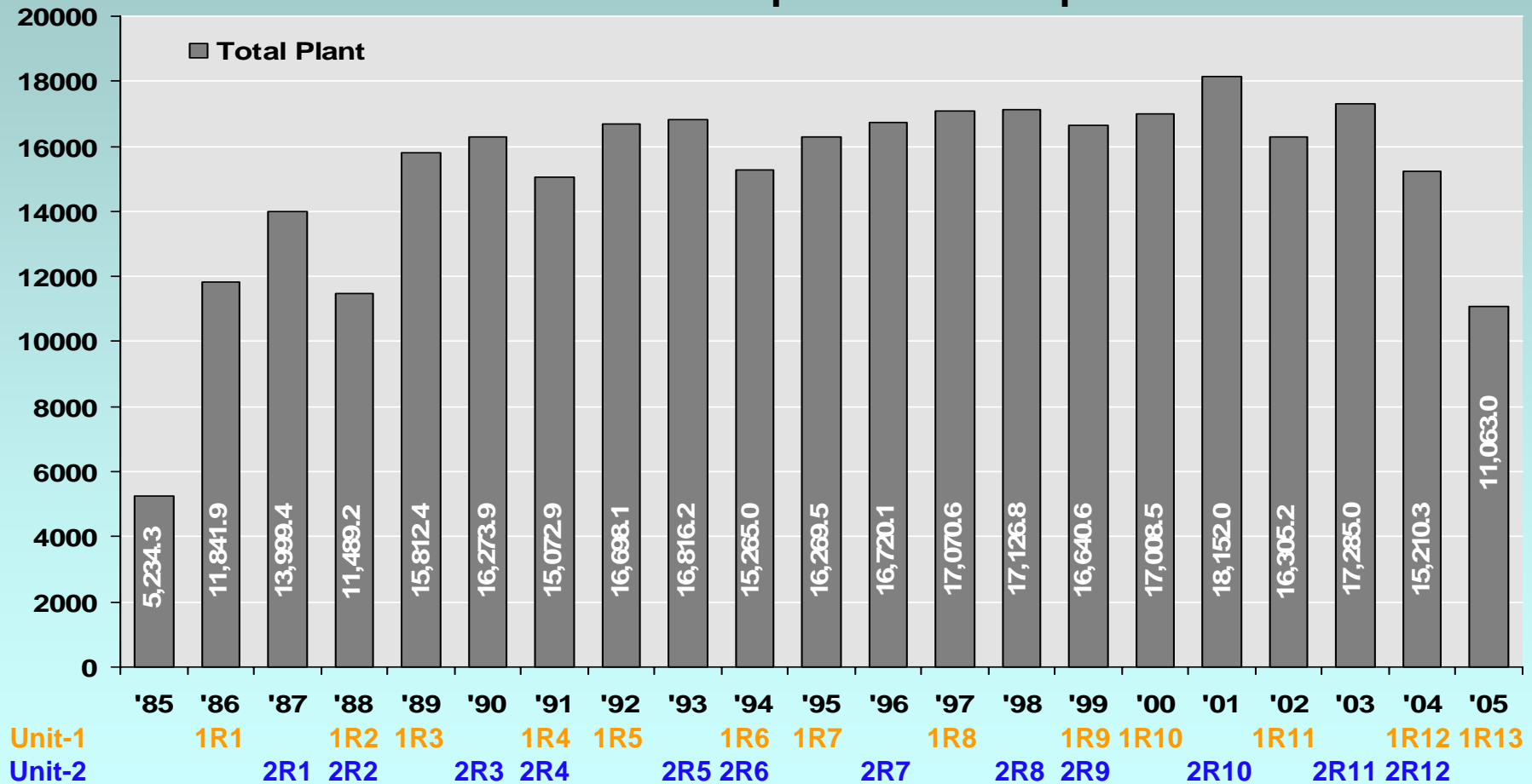
Operating Capacity Factor



Diablo Canyon Power Plant

Gigawatthours

Production on the Grid less power consumption from the Grid



Total Plant Lifetime Net Generation: 317,355.1 Gwh

Cost of Energy

- **Power from Diablo Canyon is Charged to Customers on a Cost of Service Basis.**
- **Construction Costs were Mostly Recovered under Electric Restructuring. Remaining Rate Base is about \$300 M**
- **Diablo Cost -- \$43/MW-hr**
 - Includes Fuel, O&M, Capital and Depreciation
 - CPUC “MPR”-- about \$60/Mw-hr

Environmental Benefits

- **DCPP Generation Has Virtually No Impact on Air Quality**
- **Replacing DCPP's Output with Gas-Fired Combined Cycle Generation Would Increase Greenhouse Gas Emissions by Approximately 7 Million Tons Per Year**

Investments to Ensure Reliable Operations

- **Interim Spent Fuel Storage Installation**
 - In-Service Date: Thru 1st Campaign 2007
 - Estimated Total Cost: \$70 Million
- **Steam Generator Replacement**
 - In-Service Date: Unit 2 2008; Unit 1 2009
 - Estimated Total Cost: \$706 Million

Investments to Ensure Reliable Operations

- **Turbine Rotor Replacement**
 - In-Service Date: Unit 1 2005; Unit 2 2006
 - Estimated Total Cost: \$110 Million
- **Reactor Vessel Head**
 - In-Service Date: Unit 1 2009; Unit 2 2010
 - Estimated Total Cost: \$125 Million

Security Issues

- **PG&E Has Implemented Substantial Security Upgrades as Mandated by the NRC to Comply with Post-September 11 Security Requirements**
- **The NRC Audits, Monitors and Tests Plant Security Performance**
- **Energy Act Requires NRC to Reexamine Design Basis Associated With Terrorist Threat**
- **Cost of Security Upgrades -- \$25.5 Million plus \$8 Million Annually**

Seismic Issues

- **NRC License Requires PG&E to Maintain a Long Term Seismic Plan which Continually Analyzes New Seismic Events and is Updated as Necessary**
- **PG&E has Analyzed Recent Seismic Activity in the Central Coast and Reported its Findings to the NRC**
- **As Analytical Tools Become More Sophisticated, Further Analysis Has Shown That DCPP Seismic Safety Design Margin Has Increased.**

Aging Workforce

- **Aging Workforce Is An Issue At Diablo Canyon and in the Industry.**
- **Average Age of DCPP Employees is 47.6 Years**
- **Plans have been in Place for Years which Anticipate Retirements and Provide Detailed Hiring Plans in Advance of those Retirements.**



Diablo Canyon Power Plant



PG&E Plan to Address Aging Workforce Issues

- **Hiring ahead of expected attrition:**
 - Two-year training and rotation program for new engineers
 - Three-to-five year operator training program
 - Three-year apprenticeships for new maintenance workers
- **No problems to date finding and retaining good employees.**



Diablo Canyon Power Plant



- Conclusions:
 - Diablo Canyon History of Safety and Operations Performance Excellence Continues As The Plant Reaches “Middle Age”
 - PG&E is Investing \$1 Billion Over The Next 10 Years To Ensure That Diablo Canyon Will be Safely and Reliably Operated Through the End Of the NRC License Period
 - Diablo Canyon is a Cost-Effective Source of Power and an Important Component of PG&E’s Diverse Resource Mix